APM-66ES

SERVICE MANUAL

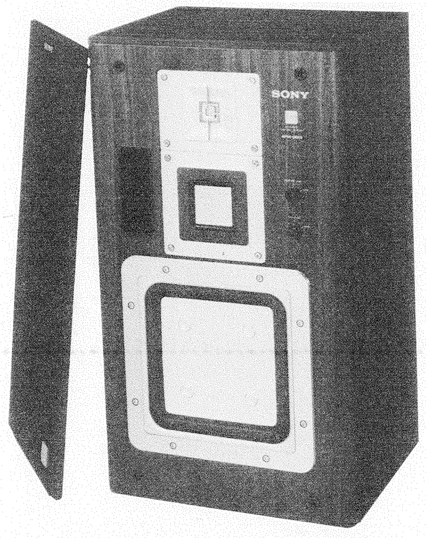
US Model
Canadian Model
AEP Model
UK Model
E Model

Note:

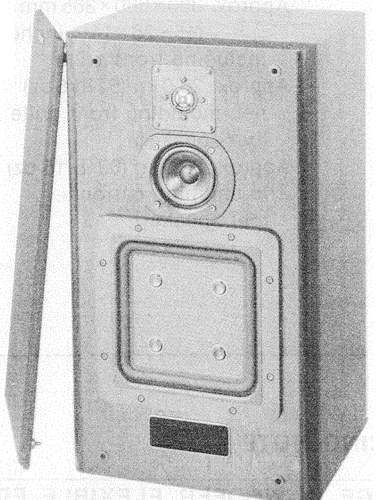
There are two types of APM-66ES. (See photos below.)
Take care when repairing.

REVISED

Discard APM-66ES SERVICE MANUAL (No. 9-951-878-11) previously issued.



– TYPE 1 (R-CH unit) –



– TYPE 2 –
(For West Germany)

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TYPE 1

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TYPE 2

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SPEAKER SYSTEM

SONY®

AUD

MICROFILM

TYPE 1

SPECIFICATIONS

Speaker system	3-way speaker system
Speaker units	Woofer: 424 cm^2 (66 in^2), APM type Midrange: 48 cm^2 (7.4 in^2), APM type Tweeter: 9 cm^2 (1.4 in^2), APM type
Enclosure type	Bass reflex type Removable front grille
Finish	Grained vinyl of walnut
Volume	56 liters
Nominal impedance	6 ohms
Power handling capacity	Nominal 100 W DIN 45500 Maximum 200 W DIN 45500
Sensitivity	89 dB (1 W, 1 m) 5 W (96 dB, 1 m) DIN 45500
Frequency range	30 Hz-30,000 Hz
Crossover frequency	600 Hz, 4,500 Hz
Dimensions	Approx. 380 × 660 × 365 mm (w/h/d) (15 × 26 × $14^{3}/_{8}$ inches) including front grille
Weight	Approx. 26.0 kg (57 lb 6 oz) net, including front grille (per speaker) Approx. 29.0 kg (63 lb 15 oz) in shipping carton (per speaker)

FEATURES

- The APM-66ES's flat diaphragm is a very lightweight but very rigid honeycomb sandwich structure whose pistonic motion moves air very efficiently.
- The 424 cm^2 woofer reproduces a powerful bass.
- The acoustically rounded enclosure improves directivity characteristics by minimizing the diffraction effect.

SERVICING NOTE

CHANGE IN WOOFER FLEXIBLE EDGE

Flexible edge of woofer (SP1) has been changed in the midst of production.

Former type (Urethan)

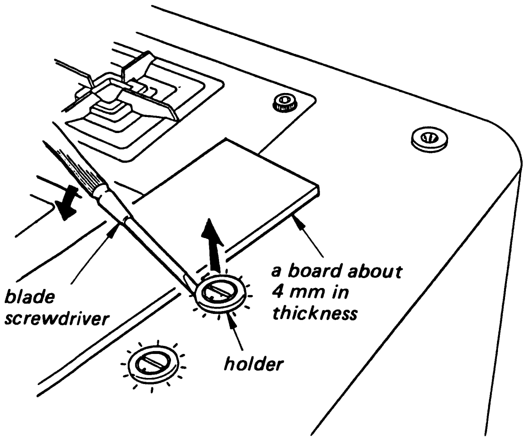
Canadian, AEP, UK, E model: Up to serial No. 302,600.
US model: Up to serial No. 800,440.

New type (Synthetic Rubber)

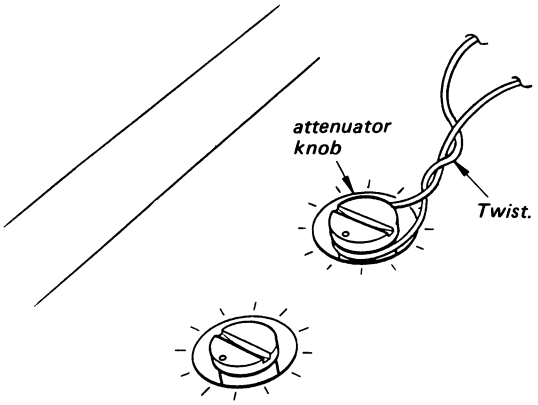
Canadian, AEP, UK, E model: Serial No. 302,601 and later.
US model: Serial No. 800,441 and later.

1. ATTENUATOR REMOVAL

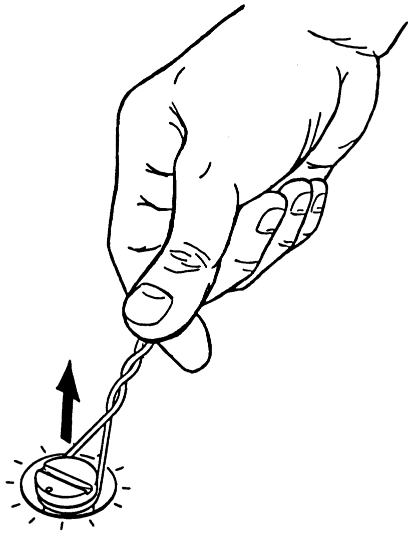
① Remove the holder as shown in the figure.


blade screwdriver
a board about 4 mm in thickness
holder

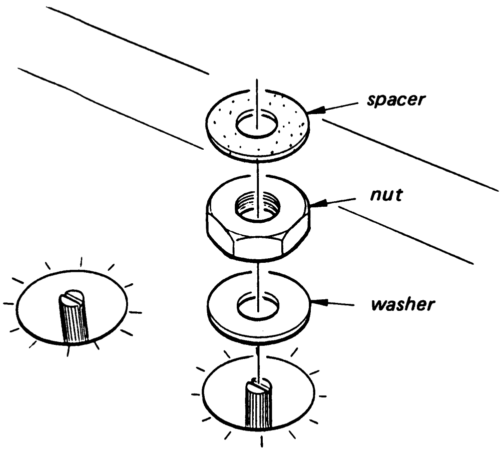
② String to the attenuator knob as shown in the figure.


attenuator knob
Twist.

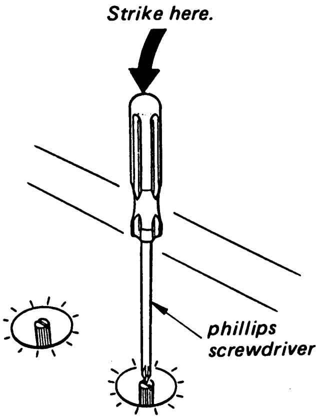
③ Give a pull at the string and remove the attenuator knob.



④ Remove the spacer, nut and washer.


spacer
nut
washer

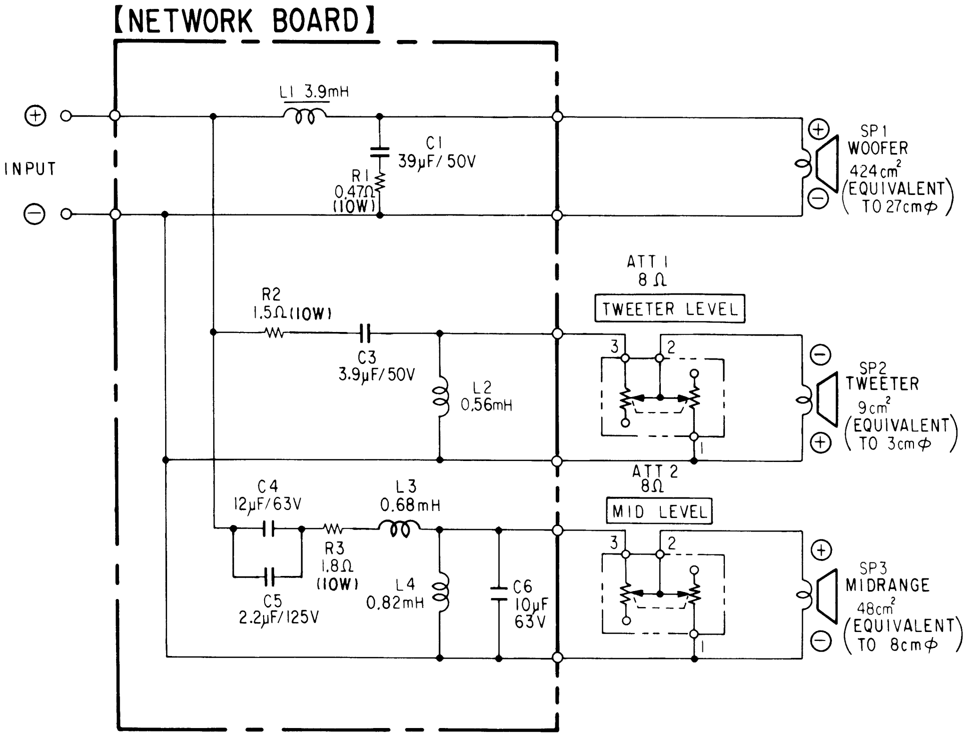
⑤ Strike the shaft of attenuator as shown in the figure to let the attenuator fall into the speaker cabinet.


Strike here.
phillips screwdriver

1 2 3 4 5 6 7

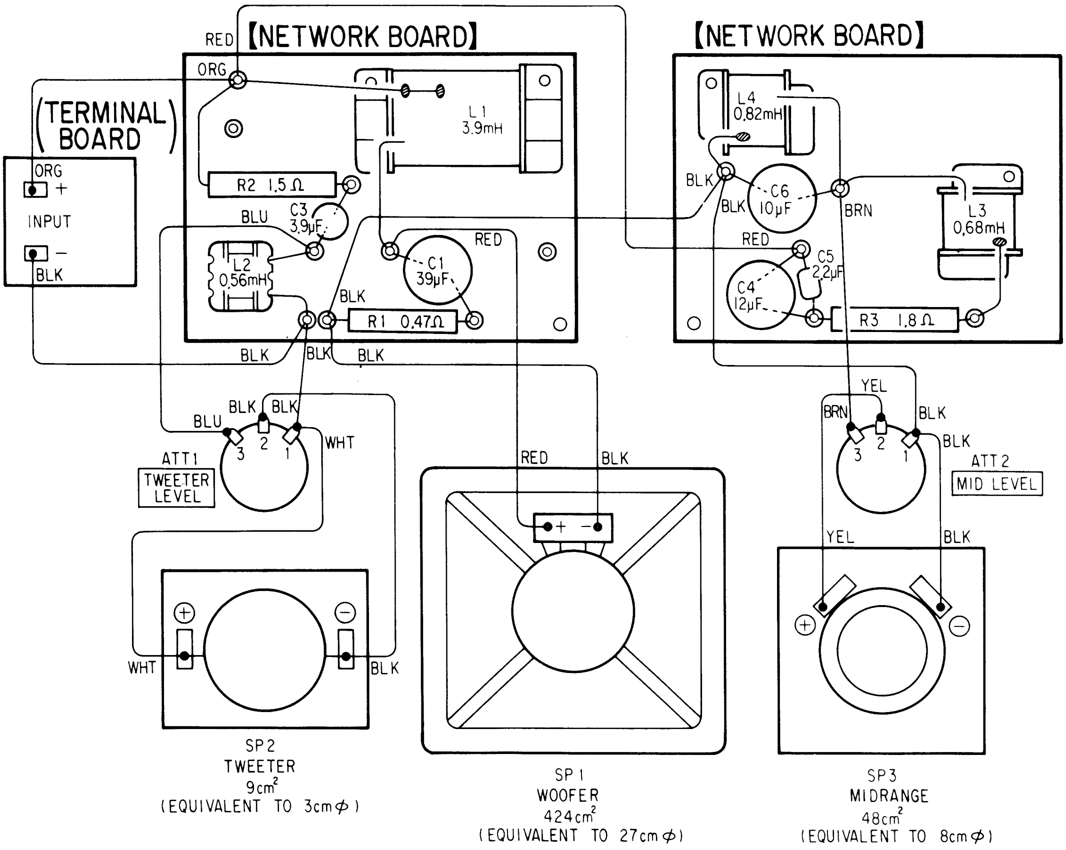
2. SCHEMATIC DIAGRAM

A B C D E


【NETWORK BOARD】
⊕
INPUT
⊖
L1 3.9mH
C1 39μF/50V
R1 0.47Ω (10W)
SP1 WOOFER 424cm² (EQUIVALENT TO 27cmφ)
ATT 1 8Ω
TWEETER LEVEL
R2 1.5Ω(10W)
C3 3.9μF/50V
L2 0.56mH
3
2
1
SP2 TWEETER 9cm² (EQUIVALENT TO 3cmφ)
ATT 2 8Ω
MID LEVEL
C4 12μF/63V
L3 0.68mH
R3 1.8Ω (10W)
C5 2.2μF/125V
L4 0.82mH
C6 10μF 63V
SP3 MIDRANGE 48cm² (EQUIVALENT TO 8cmφ)

3. WIRING DIAGRAM

F G H I


RED
【NETWORK BOARD】
ORG
L1 3.9mH
(TERMINAL BOARD)
ORG
+
INPUT
−
BLK
R2 1.5Ω
BLU
C3 3.9μF
RED
L2 0.56mH
C1 39μF
BLK
R1 0.47Ω
BLK
BLK
BLK
BLK
BLK
BLU
3
2
1
WHT
ATT1 TWEETER LEVEL
RED
BLK
+
−
【NETWORK BOARD】
L4 0.82mH
BLK
BLK
C6 10μF
BRN
L3 0.68mH
RED
C5 2.2μF
C4 12μF
R3 1.8Ω
YEL
BRN
BLK
BLK
3
2
1
ATT2 MID LEVEL
YEL
BLK
⊕
⊖
WHT
BLK
⊕
⊖
SP2 TWEETER 9cm² (EQUIVALENT TO 3cmφ)
SP1 WOOFER 424cm² (EQUIVALENT TO 27cmφ)
SP3 MIDRANGE 48cm² (EQUIVALENT TO 8cmφ)

4. EXPLODED VIEW AND PARTS LIST

NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

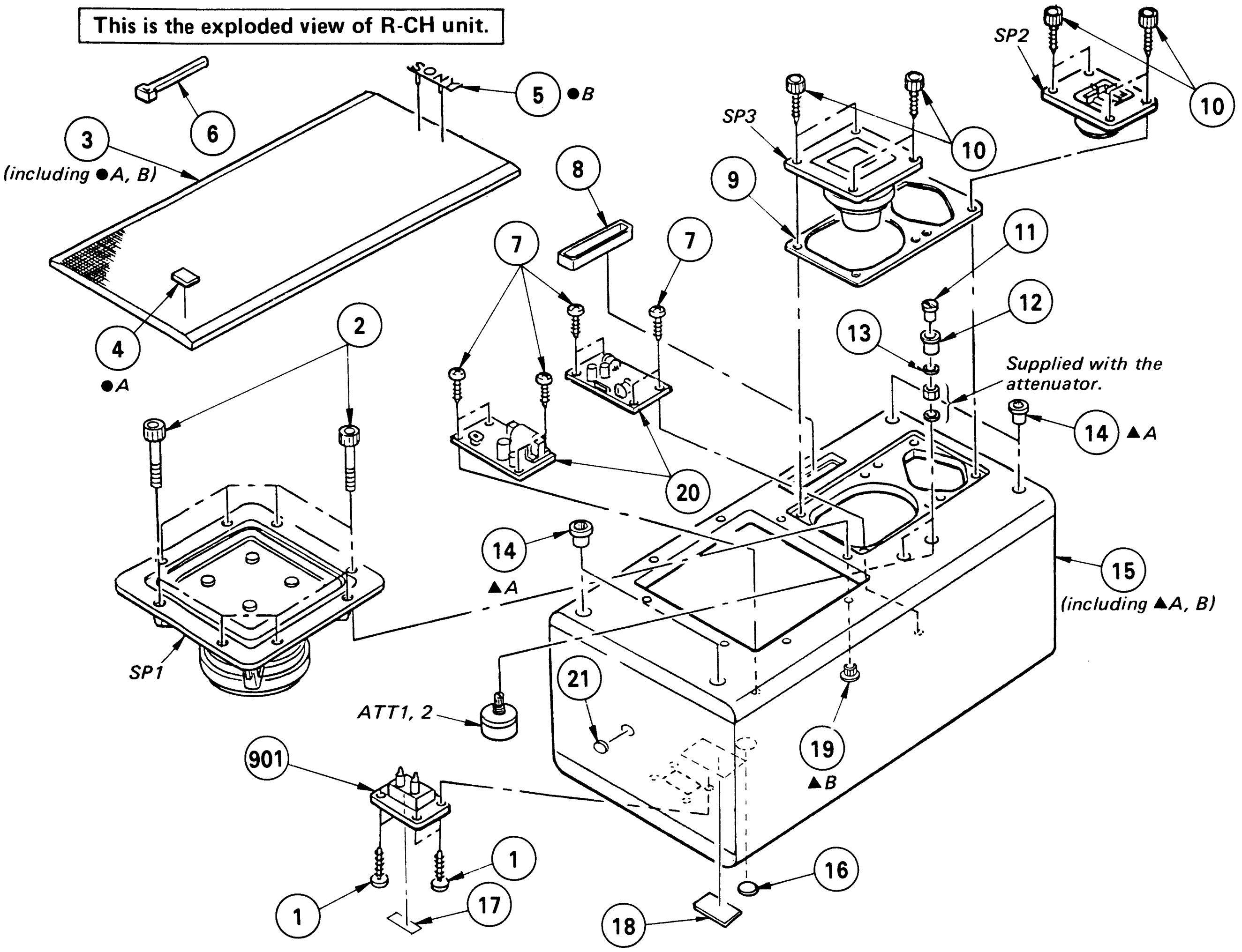
· Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

RESISTORS
· All resistors are in ohms.
· F : nonflammable

COILS
· MMH : mH, UH : μH

CAPACITORS:
MF:μF, PF:μμF.

This is the exploded view of R-CH unit.



GENERAL SECTION

No.	Part No.	Description	Remarks
1	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
2	7-683-444-02	BOLT, HEXAGON SOCKET 5X30	
3	X-4911-402-1	FRAME ASSY (BR), GRILLE	
4	4-911-407-01	EMBLEM, APM	
5	*4-849-833-41	EMBLEM, SONY	
6	*3-701-748-00	CLAMP	
7	7-621-843-45	SCREW, WOOD +R 3.1X16	
8	*4-911-409-11	ESCUTCHEON, DUCT	
9	*4-911-405-01	PACKING, TW.M	
10	4-874-517-11	SCREW, TAPPING, HEXAGON HOLE	
11	3-568-604-71	KNOB, ATT	
12	*4-905-704-11	HOLDER	
13	3-831-441-XX	SPACER	
14	4-886-220-11	CATCHER	
15	*X-4911-406-1	CABINET ASSY (W)(LEFT), SPEAKER	
	*X-4911-407-1	CABINET ASSY (W)(RIGHT), SPEAKER	
16	*4-911-408-01	LABEL, INDICATION, LEFT	
	*4-911-408-11	LABEL, INDICATION, RIGHT	
17	*4-911-413-01	LABEL, MODEL NUMBER	
18	*4-875-621-00	LABEL, CAUTION	
19	2-224-905-00	NUT	
20	*4-911-414-01	BOARD, NETWORK	
21	4-849-049-01	LID	

ELECTRICAL PARTS

901	1-536-942-11	TERMINAL BOARD (SPEAKER)
ANT1	1-511-031-00	ATTENUATOR
ANT2	1-511-031-00	ATTENUATOR

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C1	1-124-774-11	CAP, ELECT	39MF	10%	50V
C3	1-124-775-11	CAP, ELECT	3.9MF	10%	50V
C4	1-124-412-00	CAP, ELECT(NONPOLAR)	12MF	10%	63V
C5	1-130-674-00	CAP, POLYESTER FILM	2.2MF	10%	125V
C6	1-123-815-00	CAP, ELECT(NONPOLAR)	10MF	10%	63V
L1	*1-459-492-00	COIL, NETWORK 3.9MMH			
L2	1-459-438-00	COIL, NETWORK 0.56MMH			
L3	*1-459-631-11	COIL, NETWORK (CHU TYPE) 0.68MMH			
L4	*1-459-361-00	COIL, NETWORK (CHU TYPE) 0.82MMH			
R1	1-205-795-11	RES, CEMENT WIREWOUND 0.47		10%	10W
R2	1-205-747-11	RES, CEMENT WIREWOUND 1.5		10%	10W
R3	1-205-794-11	RES, CEMENT WIREWOUND 1.8		10%	10W
SP1	8-927-203-00	(FORMER)....SPEAKER UNIT 180A003 (WOOFER)			
SP1	8-927-246-00	(NEW)........SPEAKER UNIT 180A004 (WOOFER)			
SP2	8-927-202-00	SPEAKER UNIT 024A011 (TWEETER)			
SP3	8-927-243-00	SPEAKER UNIT 060A006 (MIDRANGE)			

ACCESSORY & PACKING MATERIAL

1-556-650-00	CORD, SPEAKER CONNECTION
3-701-020-00	BAG, CHECK SHEET
3-760-606-11	MANUAL, INSTRUCTION
4-856-103-01	BAG, PROTECTION
4-886-316-00	CUSHION
4-911-402-01	INDIVIDUAL CARTON
4-911-403-01	SPACER, UPPER LOWER
*4-911-413-01	LABEL, MODEL NUMBER

TYPE 2

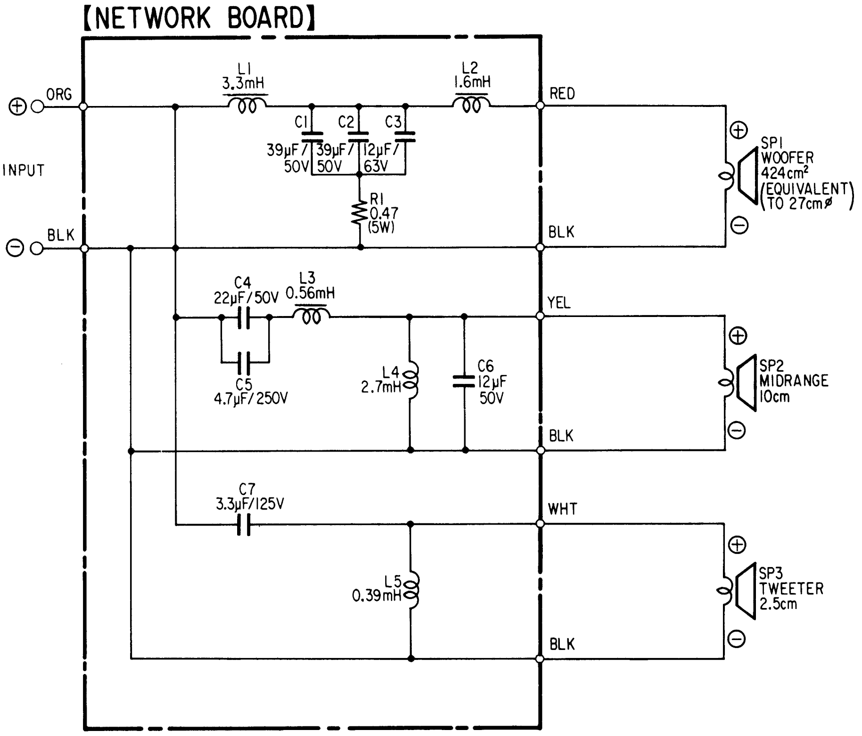
SPECIFICATIONS

Speaker system	3-way speaker system
Speaker units	Woofer: 424 cm^2 (66 in^2), APM type Midrange: 10 cm, cone type Tweeter: 2.5 cm, dome type
Enclosure type	Bass reflex type Removable front grille
Finish	Grained vinyl of black
Volume	56 liters
Nominal impedance	6 ohms
Power handling capacity	Nominal 100 W DIN 45500 Maximum 200 W DIN 45500
Sensitivity	89 dB (1 W, 1 m) 5 W (96 dB, 1 m) DIN 45500
Frequency range	35 Hz–30,000 Hz
Crossover frequency	500 Hz, 3,500 Hz
Dimensions	Approx. 380 × 660 × 365 mm (w/h/d) (15 × 26 × $14^{3}/_{8}$ inches) including front grille
Weight	Approx. 25 kg (55 lb 2 oz) net, including front grille (per speaker) Approx. 28 kg (61 lb 12 oz) in shipping carton (per speaker)

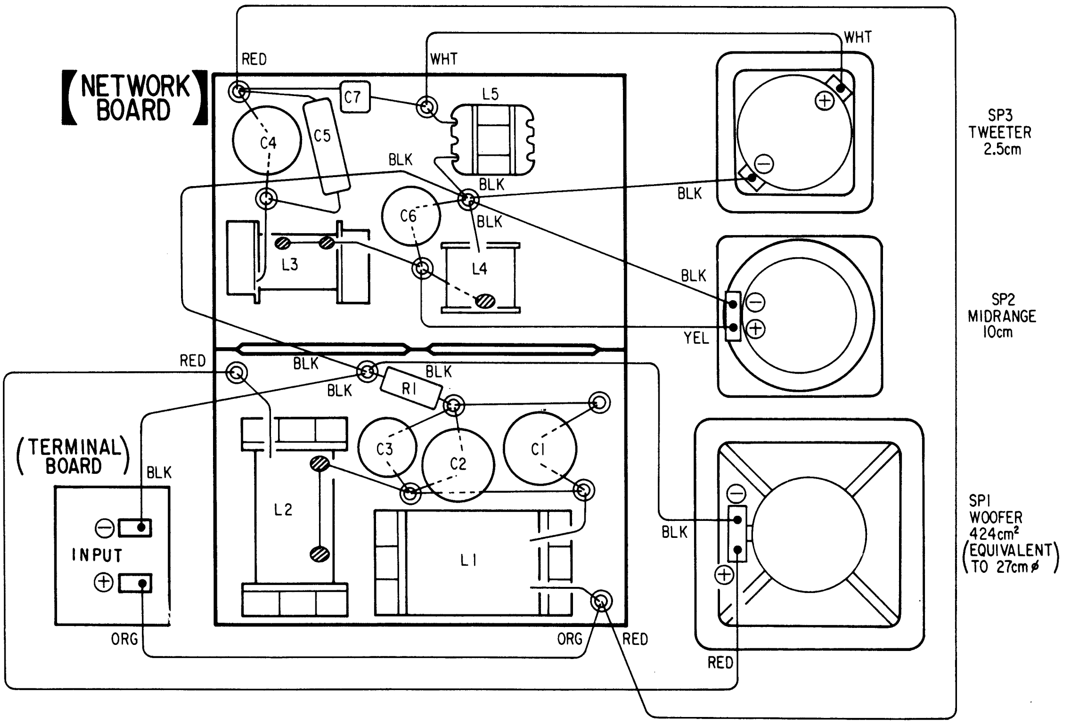
FEATURES

- The APM-66ES's flat diaphragm is a very lightweight but very rigid honeycomb sandwich structure whose pistonic motion moves air very efficiently.
- The 424 cm^2 woofer reproduces a powerful bass.
- The acoustically rounded enclosure improves directivity characteristics by minimizing the diffraction effect.

1. SCHEMATIC DIAGRAM

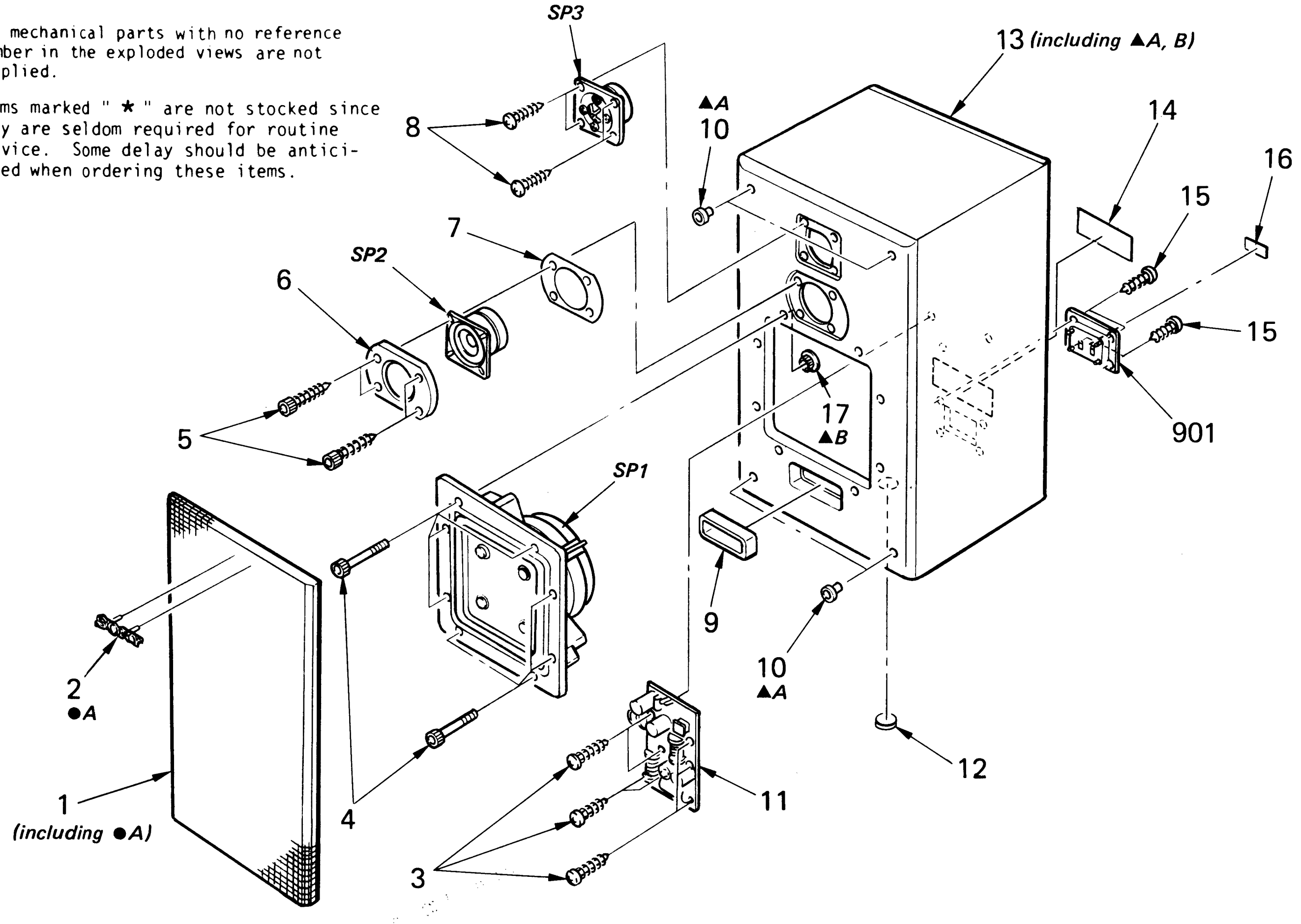

[NETWORK BOARD]
INPUT
⊕ ORG
⊖ BLK
L1 3.3mH
L2 1.6mH
C1 39μF/50V
C2 39μF/50V
C3 12μF/63V
R1 0.47 (5W)
C4 22μF/50V
L3 0.56mH
C5 4.7μF/250V
L4 2.7mH
C6 12μF 50V
C7 3.3μF/125V
L5 0.39mH
RED
BLK
YEL
BLK
WHT
BLK
SP1 WOOFER 424cm² (EQUIVALENT TO 27cmø)
SP2 MIDRANGE 10cm
SP3 TWEETER 2.5cm

2. MOUNTING DIAGRAM


[NETWORK BOARD]
(TERMINAL BOARD)
INPUT
RED
WHT
C7
L5
C4
C5
BLK
C6
L3
L4
R1
C3
C2
C1
L2
L1
ORG
RED
YEL
SP3 TWEETER 2.5cm
SP2 MIDRANGE 10cm
SP1 WOOFER 424cm² (EQUIVALENT TO 27cmø)

3. EXPLODED VIEW AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



No.	Part No.	Description	Remarks
1	X-4911-408-1	FRAME ASSY, GRILLE	2
2	*4-849-833-41	EMBLEM, SONY	
3	7-621-843-45	SCREW, WOOD +R 3.1X16	
4	7-683-444-04	BOLT, HEXAGON SOCKET 5X30	
5	4-872-205-00	SCREW (4X25), TAPPING	
6	4-911-435-01	FRAME, ORNAMENTAL, MID	
7	*4-911-433-01	PACKING, MID	
8	4-916-118-01	SCREW (4) (3.5X20), TAPPING	
9	*4-911-409-01	ESCUTCHEON, DUCT	
10	4-886-220-00	CATCHER	
11	*4-911-434-01	BOARD, NETWORK	
12	4-849-049-01	LID	
13	*X-4911-409-1	CABINET ASSY, SPEAKER	10,17
14	*4-875-621-00	LABEL, CAUTION	
15	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
16	*4-911-413-01	LABEL, MODEL NUMBER	
17	2-224-905-00	NUT	

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-556-650-00	CORD, SPEAKER CONNECTION
3-765-629-41	MANUAL, INSTRUCTION
4-886-316-00	CUSHION
4-911-403-01	SPACER, UPPER LOWER
4-911-426-01	CUSHION, GRILLE PROTECTION
4-911-427-01	BAG, PROTECTION
4-911-438-01	INDIVIDUAL CARTON

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	1-536-942-11	TERMINAL BOARD (SPEAKER)			
C1	1-124-774-11	CAP, ELECT	39MF	10%	50V
C2	1-124-774-11	CAP, ELECT	39MF	10%	50V
C3	1-124-412-00	CAP, ELECT(NONPOLAR)	12MF	10%	63V
C4	1-123-860-00	CAP, ELECT(NONPOLAR)	22MF	10%	50V
C5	1-130-091-00	CAP, POLYESTEL FILM	4.7MF	10%	250V
C6	1-124-412-00	CAP, ELECT(NONPOLAR)	12MF	10%	63V
C7	1-130-673-00	CAP, POLYESTER FILM	3.3MF	10%	125V
L1	1-459-200-00	COIL, NETWORK 3.3MMH			
L2	1-459-687-11	COIL, NETWORK 1.6MMH			
L3	1-459-190-00	COIL, NETWORK (CHUS TYPE) 0.56MMH			
L4	1-459-686-11	COIL, NETWORK (M) 2.7MMH			
L5	*1-459-428-00	COIL, NETWORK 0.39MMH			
R1	1-217-600-00	RES, WIREWOUND 0.47		10%	5W
SP1	8-927-287-00	SPEAKER UNIT 180A010 (WOOFER)			
SP2	1-503-731-11	SPEAKER (MIDRANGE)			
SP3	1-503-730-11	SPEAKER (TWEETER)			

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

English
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